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09/811,033	03/16/2001	Yuichi Kamioka	28569.9200	5694

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EXAMINER

PATEL, GAUTAM

ART UNIT

PAPER NUMBER

2655

DATE MAILED: 09/24/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/811,033

Applicant(s)

KAMIOKA ET AL.

Examiner

Gautam R. Patel

Art Unit

2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 18 and 19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 and 20-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 March 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

9

DETAILED ACTION

1. Claims 1-25 are pending for the examination. Claims 18-19 are removed from further examination.

Election/Restriction

2. Claims 18-19 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species [species other than figs. 1-6], there being no allowable generic or linking claim. Election was made without traverse in Paper No. 8.

The requirement is still deemed proper and is therefore made **FINAL**.

3. Applicant is reminded that upon the **cancellation of claims to a non-elected invention, the inventorship must be amended** in compliance with 37 C.F.R. § 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a diligently-filed petition under 37 C.F.R. § 1.48(b) and by the fee required under 37 C.F.R. § 1.17(h).

Priority

4. Receipt is acknowledged of papers submitted under 35 U.S.C. § 119(a)-(d), which papers have been placed of record in the file.

Drawings/Objection

5. The drawings are objected for following reasons:

Figures 1-22 are not designated by a legend such as "**Prior Art**". The legend is necessary in order to clarify what applicant's invention is (see MPEP § 608.02g).

Applicant is required to submit a proposed drawing correction in response to this Office Action. Any proposal by the applicant for amendment of the drawings to cure defects must consist of **two** parts:

1. A separate letter to the Draftsman in accordance with MPEP § 608.02 (r); and,
2. A print or pen-and-ink sketch showing changes in red ink in accordance with MPEP § 608.02 (v).

IMPORTANT NOTE: The filing of new formal drawings to correct the noted defect may be deferred until the application is allowed by the examiner, but the print or pen-and-ink sketch with proposed corrections shown in *red ink* is required in response to this Office Action, and may not be deferred.

Correction are required.

Specification

6. The disclosure is objected for following reasons.

The title of the invention is neither precise nor descriptive. A new title is required which should include, using twenty words or fewer, claimed features that differentiate the invention from the Prior Art. It is recommended that the title should reflect the gist of or the improvement of the present invention.

Correction is required.

Claim Rejections - 35 U.S.C. § 103

7. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2655

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-8, 10-17 and 20-21 are rejected under 35 U.S.C. § 103(a) as being unpatentable over AAPA, "Applicants Admitted Prior Art" (hereafter AAPA) in view of Taguchi, US. patent 6,011,768 (hereafter Taguchi).

As to claim 1, AAPA discloses the invention as claimed [see Figs. 13-22], including a reproduction current generation section, a high frequency current generation section, a recording current generation section, and current driving section comprising:

- a reproduction current generation section [fig. 17, unit 518] for generating the reproduction current [page 7-8; specification];

- a high frequency current generation section [fig. 17, unit 519] for generating a high frequency current including a high frequency component for reducing semiconductor laser noise included in the reproduction [page 7-8; specification];

- a recording current generation section [fig. 17, unit 518] for generating the recording current, the recording current including a pulse corresponding to the recording mark and the pulse including a plurality of multi-pulses [page 7-8; specification]; and

- a current driving section [fig. 17, unit 511] for amplifying the reproduction current and the recording current, wherein the high frequency component included in the high frequency current generated by the high frequency current generation section is enhanced at the time of reproduction, and the high frequency component included in the recording current generated by the recording current generation section is enhanced at the time of recording [page 79-10; specification];

AAPA discloses all of the above elements, including a high frequency generator. AAPA does not specifically disclose a high pass filter for attenuation and a switch that switches this filter OFF and ON; and details that are normally associated with the filter.

However, it is well known in the art that most high pass filters are usually associated with noise and noise removal is essentially necessary for smooth operation of the system because noisy environment may cause spikes in the electrical system, thus corrupting or destroying valuable data or signals. Also Taguchi clearly discloses:

a filter [fig. 3, units 56, 55 and 90] for operating so as to attenuate the enhanced high frequency component included in the high frequency current generated by the high frequency current generation section and the enhanced high frequency component included in the recording current generated by the recording current generation section [col. 5, lines 8-23]; and

a switching section [fig. 6, unit 200] for switching the filter on or off so that the enhanced high frequency component included in the recording current is superposed on at least one of the plurality of multi-pulses included in the pulse of the recording current. [col. 8, line 36 to col. 9, line 4].

Both AAPA and Taguchi discloses a laser control circuit and a high frequency generation and control circuits and all associated details.

One of ordinary skill in the art at the time of invention would have realized that the high frequency generation and management of high frequency signals are inherently associated with noise. Since noise is an unwanted component in the system some kind of noise reduction or removal system is inherently necessary and desirable. Therefore, it would have been obvious to have used a high pass filter in the system of AAPA as taught by Taguchi because one would be motivated to reduce noise in the system of AAPA and provide better signal controls and improve quality of the signal by providing restriction to passage of low frequency noise components [col. 5, lines 12-22].

9. As to claim 2, Taguchi discloses:

the current driving section has a frequency characteristic for enhancing the high frequency component, and the current driving section enhances the high frequency

Art Unit: 2655

component included in the high frequency current generated by the high frequency current generation section at the time of reproduction and enhances the high frequency component included in the recording current generated by the recording current generation section at the time of recording [col. 2, lines 7-24 and col. 9, lines 17-24].

10. As to claim 3, Taguchi discloses:

switching section includes a switch connected to the filter and a timing control section [inherently present] for controlling the timing of opening or closing of the switch [col. 2, lines 7-24 and col. 9, lines 17-24].

NOTE: Since switching is done internally some timing circuit inherently has to switch OFF and ON.

11. As to claim 4, Taguchi discloses:

the at least one of the plurality of multi-pulses [fig. 13, pulse 134] includes a leading multi-pulse [fig. 13, pulse 135] [page 2, specification].

12. As to claim 5, Taguchi discloses:

the pulse fig. 13, 133] includes a specific pulse [fig. 13, 135 and 137] having a specific pattern [page 2, specification]; as to rest of the claim Taguchi discloses:

the switching section causes the filter to operate so that the enhanced high frequency component included in the recording current is superposed on the specific pulse [col. 2, lines 7-24 and col. 9, lines 17-24].

13. As to claim 6, AAPA discloses:

the recording mark includes a 3T mark recorded by 8-16 modulation [inherently present],

the specific pulse includes a 3T pulse corresponding to the 3T mark [fig. 20] [page 15; specification]. As to rest of the claim Taguchi discloses:

the switching section causes the filter to operate so that the enhanced high frequency component included in the recording current is superposed on the 3T pulse [col. 2, lines 7-24 and col. 9, lines 17-24].

NOTE: Since Taguchi covers all the pulses 3T pulse is also covered.

14. As to claim 7, Taguchi discloses:

the switching section causes the filter to operate so that the enhanced high frequency component included in the recording current is superposed on a portion of at least one of the plurality of multi-pulses included in the pulse [col. 2, lines 7-24 and col. 9, lines 17-24].

NOTE: Since Taguchi covers all the pulses one pulse is also covered.

15. As to claim 8, Taguchi discloses:

switching section causes the filter to operates so that the enhanced high frequency component included in the recording current is superposed on an entirety of at least one of the plurality of multi-pulses included in the pulse [col. 2, lines 7-24 and col. 9, lines 17-24].

NOTE: Since Taguchi covers all the pulses at least one of the plurality of multi-pulse is also covered.

16. As to claim 10, Taguchi discloses:

the switching section causes the filter to operate so that the enhanced high frequency component included in the recording current in superposed on all of the plurality of multi-pulses included in the pulse [col. 2, lines 7-24 and col. 9, lines 17-24].

NOTE: Since Taguchi covers all the pulses at least one of the plurality of multi-pulse is also covered.

17. As to claim 11, AAPA discloses:

the reproduction current is a DC current [see fig. 13 and page 2-3, specification]

18. As to claim 12, Taguchi discloses:

the switching section causes the filter to operate so that the enhanced high frequency component included in the high frequency current is superposed on the reproduction current at the time of reproduction, and causes the filter to operate so that the enhanced high frequency component included in the recording current is attenuated at the time of recording [col. 2, lines 7-24 and col. 9, lines 17-24].

19. As to claim 13, Taguchi discloses:

the high frequency -component has a frequency of 100 MHz or higher [col. 1, lines 47-63].

20. As to claim 14, Taguchi discloses:

the high frequency component has a frequency of 100 MHz [col. 1, lines 47-63].

Taguchi teaches that frequency is 100 MHz or higher. Taguchi does not teach that frequency is lower than 450 MHz. "Official Notice" is taken that both the concept and the advantages of providing frequency lower than 450 MHz in this kind of systems are well known and well documented in the art. It would have been obvious to include upper limit to the higher frequency of operation and thereby reducing unnecessary extra noise that could be associated with higher frequencies. These concepts are well known in the art and do not constitute a patentably distinct limitation, per se [M.P.E.P. 2144.03].

21. As to claim 15, AAPA discloses:

the high frequency component has a frequency of substantially 300 MHz [page 9, specification].

22. As to claim 16, Taguchi discloses:

the filter includes a high pass filter [HPF] [col. 5, lines 8-23].

23. As to claim 17, Taguchi discloses:

the high frequency component has a frequency which is higher than a cut-off frequency of the filter [col. 5, lines 8-23].

NOTE: Here the Applicants are merely stating how a HPF works.

24. As to claim 20, AAPA discloses:

an optical pickup [fig. 15, unit 2] for recording a recording mark on an optical disc [fig. 15, unit 1] and reproducing the recording mark recorded on the optical disc;

a motor [fig. 15, unit 3] for rotating the optical disc; and

a control block [fig. 15, unit 7] for controlling the optical pickup and the motor [pages 4-5; specification],

wherein the optical pickup includes:

a semiconductor laser [fig. 16, unit 21] for directing light to the optical disc for recording the recording mark on the optical disc based on a recording current and reproducing the recording mark recorded on the optical disc so as to generate a reproduction signal [pages 5-7; specification], and

a semiconductor laser driving apparatus [fig. 16, unit 22] for driving the semiconductor laser [pages 5-7; specification], the semiconductor laser driving apparatus including:

a reproduction current generation section [fig. 17, unit 518] for generating the reproduction current [page 7-8; specification]:

a high frequency current generation section [fig. 17, unit 519] for generating a high frequency current including a high frequency component for reducing semiconductor laser noise included in the reproduction [page 7-8; specification];

a recording current generation section [fig. 17, unit 518] for generating the recording current, the recording current including a pulse corresponding to the recording mark and the pulse including a plurality of multi-pulses [page 7-8; specification]; and

a current driving section [fig. 17, unit 511] for amplifying the reproduction current and the recording current, wherein the high frequency component included in the high frequency current generated by the high frequency current generation section is enhanced at the time of reproduction, and the high frequency component included in the

Art Unit: 2655

recording current generated by the recording current generation section is enhanced at the time of recording [page 79-10; specification];

AAPA discloses all of the above elements, including a high frequency generator. AAPA does not specifically disclose a high pass filter for attenuation and a switch that switches this filter OFF and ON; and details that are normally associated with the filter.

However, it is well known in the art that most high pass filters are usually associated with noise and noise removal is essentially necessary for smooth operation of the system because noisy environment may cause spikes in the electrical system, thus corrupting or destroying valuable data or signals. Also Taguchi clearly discloses:

a filter [fig. 3, units 56, 55 and 90] for operating so as to attenuate the enhanced high frequency component included in the high frequency current generated by the high frequency current generation section and the enhanced high frequency component included in the recording current generated by the recording current generation section [col. 5, lines 8-23]; and

a switching section [fig. 6, unit 200] for switching the filter on or off so that the enhanced high frequency component included in the recording current is superposed on at least one of the plurality of multi-pulses included in the pulse of the recording current. [col. 8, line 36 to col. 9, line 4].

Both AAPA and Taguchi disclose a laser control circuit and a high frequency generation and control circuits and all associated details.

One of ordinary skill in the art at the time of invention would have realized that the high frequency generation and management of high frequency signals are inherently associated with noise. Since noise is an unwanted component in the system some kind of noise reduction or removal system is inherently necessary and desirable. Therefore, it would have been obvious to have used a high pass filter in the system of AAPA as taught by Taguchi because one would be motivated to reduce noise in the system of AAPA and provide better signal controls and improve quality of the signal by providing restriction to passage of low frequency noise components [col. 5, lines 12-22].

25. As to claim 21, it is rejected for the same reasons set forth in the rejection of claim 2, supra.

26. Claim 9 is rejected under 35 U.S.C. § 103(a) as being unpatentable over combination of AAPA and Taguchi as applied to claim 1 above, and further in view of Iwasa et al., US. patent 5,327,411 (hereafter Iwasa).

As to claim 9, combination of AAPA and Taguchi discloses all of the above elements including a multi-pulse waveform and a multi-pulse leading pulse, middle pulse and trailing pulse. Even though AAPA discloses a trailing pulse it is not clear if consist of multi-pulse or not. In other words where middle pulse stops and end pulse starts. The combination of AAPA and Taguchi does not specifically disclose well known details of trailing pulse or that trailing pulse could consist of multiple pulses itself, to the extent claimed.

However Iwasa clearly discloses:

the at least one of the plurality of multi-pulses includes a trailing multi-pulse [col. 9, lines 18-32; col. 12, lines 12-65; fig. 4 and especially fig. 17].

Both combination of AAPA and Taguchi, and Iwasa are interested in providing smooth signals and generating multi-pulse for forming regular marks without any tear-drop shape..

Therefore, it would have been obvious to provide the system of AAPA and Taguchi with pulse forming circuit [fig. 3, unit 4] and associated details as taught by Iwasa. The application or use of the pulse forming circuit as taught by Iwasa would have been obvious, because the pulse forming circuit performs the same function in the same way as the pulse forming circuit of AAPA and Taguchi system, and is an equivalent element. One of ordinary skill in the art would have recognized that the pulse forming circuit of Iwasa was equivalent and an obvious alternative to pulse forming circuit of system of AAPA and Taguchi.

Allowable Subject Matter

Art Unit: 2655

27. Claims 22-25 are objected as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

NOTE: Claims 22-25 are allowable over the prior art of record since the cited references taken individually or in combination fails to particularly disclose an optical disc which includes the control block which includes a linear velocity detection section and the switching section "the switching section cause the filter to operate so as to superpose high frequency component included in the recording current on at least one of the plurality of multi-pulses included in the pulse based on the linear velocity of the disc". It is noted that the closest prior art, Taguchi shows a similar apparatus which provides all the components and filter. However Taguchi fails to disclose a signal based on velocity that modifies the filter.

Other prior art cited

28. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
1. Yamada et al. (US. patent 6,153,063) "Optical information recording ..".
 2. Hara (US. patent 6,044,055) "Phase change recording ..".
 3. Zaima (US. patent 6,333,909) "Optimum reproduction laser ..".
 - a. Sonoda (US. patent 6,385,219) "Laser diode pumped ...".
 4. Carson (US. patent 6,477,124) "Varying the rate at which data appear ..".
 5. Phillips et al. (US. patent 5,475,235) "Control of laser light power ..".
 6. Ito et al. (US. patent 5,090,001) "Information recording/reproducing apparatus ...".

Contact information

29. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gautam R. Patel whose telephone number is

Art Unit: 2655

(703) 308-7940. The examiner can normally be reached on Monday through Thursday from 7:30 to 6.

The appropriate fax number for the organization (Group 2650) where this application or proceeding is assigned is (703) 872-9314.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Doris To can be reached on (703) 305-4827.

Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist whose telephone number is (703) 305-4700 or the group Customer Service section whose telephone number is (703) 306-0377.

A handwritten signature in black ink, reading "Gautam R. Patel". The signature is written in a cursive style with a horizontal line extending from the end of the name.

Gautam R. Patel
Patent Examiner
Group Art Unit 2655

September 13, 2003